

## REMARKS

By the above amendment, Claims 14-17 have been cancelled, Claim 18 has been amended, and new Claims 20-22 have been added. No new matter has been introduced by way this amendment. Claims 1-13 and 18-22 are pending in the present application, of which Claims 1-13 are withdrawn from consideration. Favorable reconsideration of this application is respectfully requested in view of the above amendments and the following remarks.

### Objection to the Specification

The disclosure was objected to because of some informalities on pages 11 and 13. The appropriate portions of pages 11 and 13 have been amended to obviate this objection.

### Claim Rejection under 35 U.S.C §112

Claim 19 was rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Office Action asserted that the term “substantially” is a relative term which renders the claim indefinite. This rejection is respectfully traversed. The term “substantial” is a meaningful modifier implying “approximate” rather than “perfect.” Liquid Dynamics Corp. v. Vaughan Co., Inc., 355 F.3d at 1368 (Fed. Cir. 2001). In Cordis Corp. v. Medtronic AVE, Inc., 339 F.3d 1352, 1361 (Fed. Cir. 2003), the court refused to impose a precise numeric constraint on the term “substantially uniform thickness,” noting that the proper interpretation of this term was “of largely or approximately uniform thickness.” Thus, it is well established that the term “substantially” is unambiguous in meaning when it is used as a modifier as in the present case. Accordingly, withdrawal of the rejection under 35 USC §112 is requested.

Claim Rejection Under 35 U.S.C. §102

Claims 14-17 and 19 were rejected under 35 U.S.C. 102(a) as being anticipated by Miller et al. (US 6,558,969).

By the above amendment, Claims 14-17 have been cancelled and Claim 19 has been amended to depend on Claim 18. Accordingly, this rejection is now moot.

Claim Rejection Under 35 U.S.C. §103

The test for determining if a claim is rendered obvious by one or more references for the purpose of a rejection under 35 U.S.C. § 103 is set forth in MPEP § 706.02(j):

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Therefore, if the above-identified criteria are not met, then the cited reference(s) fails to render obvious the claimed invention and, thus, the claimed invention is distinguishable over the cited reference(s).

Claim 18 was rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. ("Miller").

The amended Claim 18 recites a method of manufacturing a heating element, which comprises, *inter alia*:

"forming an insulating layer on a substrate;

partially etching through the thickness of the insulating layer to define a protruding portion having substantially vertical sidewalls and flanked by two shoulder portions."

Support for the amendment to Claim 18 is provided, for example, in FIG. 4B and page 10, lines 5-9, of the present application. Claim 18 further recites: "depositing a conductive layer on the insulating layer to cover the protruding portion and the shoulder portions" and "planarizing a surface of the conductive layer to expose the protruding portion to thereby form a first conductive trace separate from a second conductive trace." It is submitted that Miller does not disclose or suggest the manufacturing method of Claim 18.

Firstly, Miller fails to disclose the step of partially etching through the thickness of an insulating layer to form a protruding portion with substantially vertical sidewalls as recited in Claim 18. Secondly, Miller discloses the following step sequence: depositing a conductive layer on a dielectric layer; etching the conductive layer to create conductive traces; depositing an insulating layer over the conductive traces; then planarizing the second insulating layer to expose the elevated surface of the conductive layer (see FIG. 4; col. 6, lines 51-61). By contrast, Claim 18 recites depositing a conductive layer over an etched insulating layer, and then planarizing the conductive layer to create conductive traces. As such, the claimed method does not involve etching the conductive layer to form conductive patterns as in the case of Miller's method. The technical challenges are different between forming the planarized conductive traces according to Miller's method and according the claimed method.

Because Miller fails to disclose or suggest all of the limitations recited in Claim 18, Miller cannot support a prima facie case of obviousness regarding the subject matter of Claim 18. Therefore, Claim 18 is patentable over Miller. Claim 19, which depends on Claim 18, is also patentable over Miller at least by virtue of its dependency on Claim 18.

#### New Claims

New Claims 20-22 contain the method limitations of Claim 18. It is believed that the subject matter of Claims 20-22 is patentable over Miller at least for the same reasons that Claim 18 is patentable.

Conclusion

In light of the foregoing, withdrawal of the rejections of record and allowance of the present application are earnestly solicited.

Date : April 26, 2006

Respectfully submitted,



Mail Stop :  
Hewlett-Packard Company  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, Colorado 805272400

Thi Dang  
Attorney for Applicant  
Reg No. : 53,877  
Contact No.:+656 3746179(Singapore)  
Fax :+656 2700885 (Singapore)